ANALYST:		VPDES NO	

Parameter: Ammonia Nitrogen
Method: Spectrophotometric - Nesslerization
08/01

METHOD OF ANALYSIS:

	18th Edition of Standard Methods 4500NH_3-C
	EPA Methods for Chemical Analysis 350.2
	USGS I-3520-85
	ASTM D1426-89(A)
	AOAC 15th Edition 973.46

		Y	N
1)	Is nesslerization used for samples with NH_3-N concentrations ranging from 0.05 mg/L to 1.0 mg/L? [Permit; 350.2-1.2]		
2)	Are samples containing NH_3-N concentrations greater than 1.0 mg/L diluted to fall within the desired range? [Permit]		
3)	Are samples distilled unless there is data on hand to demonstrate that distillation is not necessary? [40 CFR]		
4)	Are samples that have not been distilled, dechlorinated with either sodium thiosulfate, phenylarsine oxide, sodium arsenite or sodium sulfite? [SM-4.a; 350.2-7.2]		
5)	Is transmittance measured with a spectrophotometer or filter photometer at 425 nm with a light path of at least 1 cm? [SM-2.a.1; 350.2-5.2]		
6)	Are matched cuvettes used for colorimetric analysis? [SM-1070 B.3; 350.2-5.3]		
7)	Are cuvettes free from scratches, fingerprints and stains? [Permit]		
8)	Is ammonia free water used in all aspects of the procedure? [SM-3; 350.2-6.1]		
9)	Is stock ammonia solution (1.0 mL = 1.0 mg NH_3-N) dated when prepared? [SM-3.d; 350.2-6.2; Permit]		
10)	Is the intermediate ammonia standard solution (1.0 mL = 0.01 mg NH_3-N) dated and prepared monthly? [SM-3.e; 350.2-6.3; Permit]		
11)	Are working standards prepared each day samples are analyzed? [SM-4.c; 350.2-7.5]		
12)	Are at least two standards, which bracket the expected sample concentration, analyzed with each sample run? [SM-1; 350.2-7.5]		
13)	Are standards prepared using Class A volumetric glassware? [SM-1070 B.2; Permit]		
14)	Is the curve prepared using the same conditions for standards as for samples (i.e. reaction time, distillation, temperature, wavelength and light path)? [SM-4.c; 350.2-7.5]		
15)	Is Nessler reagent prepared or purchased at least on an annual basis? [SM-4.c; 350.2-6.6]		
16)	Is the Nessler reagent stored out of direct sunlight? [SM-3.c; 350.2-6.6]		
17)	Is a new curve prepared when standards are not within $\pm$5.0% of the curve? [Permit]		
18)	Are all reagents free of growths or precipitates and prepared as specified in the method? [Permit]		
19)	Is sample thoroughly mixed following the addition of Nessler reagent? [SM-4.b.3; Permit]		

		Y	N
20)	Is at least ten minutes allowed for color development (up to 30 minutes may be necessary for low level determinations)? After 20 minutes for EPA 350.2? [SM-4.b.3; 350.2-7.4.2]		
21)	Is 100% transmittance set with a reagent blank? [SM-4.c; 350.2-7.4.2]		
22)	Is ammonia nitrogen calculated correctly? [SM-5; 350.2-8] $NH_3\text{-N mg/L} = \frac{A \times 1000}{D} \times \frac{B}{C}$ Where: A = mg NH_3 read from the standard curve B = mL total distillate collected, including boric acid C = mL distillate taken for nesslerization D = mL of original sample		

PROBLEMS: